Chapter - VII

Status of Agriculture
CHAPTER VII
STATUS OF AGRICULTURE

This chapter explains the agrarian status in the Madras Presidency. The nature of the soil, land survey, assessment, classification, the various settlements and the system of making loans to ryots for agricultural and land improvement purposes are examined. The development of irrigation resources are also discussed.

SOILS

Four types of soils were found in the regions of the Madras Presidency. They were the Alluvial soil, The Black cotton soil or “Regur” or “Regada”: the Red soil and the Laterite soil.

The Alluvial soils were found in the deltaic tracts of Krishna, Godavari and Cauvery and in portions of South Arcot and Tinnevelly. Alluvial profiles were either coastal or deltaic and were characterized by alternate layers of sand and silt. According to the settlement department’s classification the extent of alluvial soils in the presidency was one million acres. They were generally fertile. Paddy was the main crop grown. though sugarcane, Plantains and turmeric were also cultivated in the higher reaches.

The Black Cotton soils formed roughly one-third of the cultivated area of the Presidency and were estimated to cover 10 million acres. They were found extensively in Kurnool in the Ceded Districts, Guntur and Krishna in the Northern Circars and in Ramnad, Trichinopoly and Tanjore in the south. Guntur had the largest extent, and Kurnool 60 percent. Guntur. Bellary. Kurnool and Krishna districts account for nearly half the black soil area in the Presidency, the rest being distributed in other districts. Cotton and sorghum were the important crops of the black soils in northern district and cotton. sorghum for fodder and cumbu in the southern districts.
Red soils formed two-thirds of the cultivable area, being 20 million acres in extent. The red soil areas were particularly confined to the West Coast and the Central districts. They were deficient in organic matter and poor in plant nutrients. They absorbed rains readily but did not retain the moisture long. They got fit for sowing earlier than the black soils. Lift irrigation was a common feature of the central districts and almost all crops were grown.²

The laterites were formed in regions which were subjected to alternate heavy precipitation of over 100 inches of rainfall per year and dry hot period. They were of low fertilities and were subject to leaching under heavy rainfall conditions. paddy was the chief crop grown in this soils.³ Other crops were ginger, pepper and plantains.

LAND

Land was classified into two ‘wet and dry’.

### TABLE 7.1

<table>
<thead>
<tr>
<th>YEAR</th>
<th>HOLDINGS</th>
<th>ACTUAL AREA CULTIVATED</th>
<th>ASSESSMENT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DRY ACS</td>
<td>WET ACS</td>
<td>DRY ACS</td>
<td>WET ACS</td>
</tr>
<tr>
<td>1900 - 01</td>
<td>18,226,347</td>
<td>4,382,826</td>
<td>14,590,289</td>
<td>4,028,528</td>
</tr>
<tr>
<td>1910 - 11</td>
<td>19,815,225</td>
<td>5,068,898</td>
<td>15,294,227</td>
<td>4,832,026</td>
</tr>
<tr>
<td>1920 - 21</td>
<td>20,963,663</td>
<td>5,163,821</td>
<td>15,097,791</td>
<td>4,814,973</td>
</tr>
</tbody>
</table>

*Source: Season and Crop Reports-1900-1901, 1910-1911 & 1920-1921.*
The land which possessed an assured supply of water was classed as wet and the areas where a constant supply of water was not available were dry. The assessment was based upon the assumption that un-irrigated crops would be grown.\(^4\)

In the presidency there was only a revenue registry and no record of land rights had been attempted till 1900. The most important agrarian enactment which was passed in the Madras legislative council during the period of study was the Madras Estates Land Act which was intended to define the rights of tenants. The Act came into force on the 1\(^{st}\) of July 1908.\(^5\)

The three main principles secured by this Act were: first, the recognition of the ryot's occupancy right which was declared heritable and transferable, second, the securing for the ryot a fair and equitable rent: and third, the protection and conservation of the domain in which he may exercise his occupancy right.\(^6\)

The Act distinguished between ryot land and the private land of the landholder, limited the application of unfettered contract as a mode of settling the relations between the landholder and the ryot, defined the circumstances in which the rent could be enhanced or reduced and secured for the ryot the benefit of his improvement and immunity from the exaction of illegal cesses and the right to have the rent in kind where it prevailed commuted into money rent.\(^7\)

The Act also definitely made the landholder responsible for the maintenance of irrigation works. The Act also benefited the proprietor in a variety of ways. The rent was declared to be the first charge on the ryot's holding. The proprietor was given the right to enhance rent on the ground of a rise in prices. The annual exchange of patta was no longer compulsory and a patta partially but not entirely correct was now enforceable to the extent for which it was correct. The remedies provided for recoveries of arrears of rent were ampler and more drastic than anywhere else in India. The Act also
provided for the survey of estates, the preparation of a record of rights and the settlement of rent.\textsuperscript{8}

Under section 164 of the Act, the Government had power to order surveys and a record of rights in respect of an estate or portion of an estate.\textsuperscript{9} The record of rights prepared should generally contain the informations like, the name of each ryot and of each landholder in the estate and the name of the ryot or where there was no ryot, the name of the occupant. It should mention the situation and extent and boundaries of the land held by the ryot as shown in the survey map of the village.\textsuperscript{10}

The details like whether land was irrigated or dry, double or single crop and whether the rent was permanently payable at a fixed rate or liable to be enhanced on the ground of a rise in prices should be given. If the rent was gradually increasing rent, the times at which and steps by which it increased were to be mentioned. Further if the land was claimed to be held free of rent, and when rent was not paid, whether the occupant was entitled to hold the land without any such rent and if so entitled, on what authority and the rent payable, if the land were liable to rent\textsuperscript{11} were to be given in detail.

As a result of the introduction of the Estate land Act of 1908 the landholder and tenant were expected to transact their business without excessive resort to the courts. They now knew their exact position and rights under the new law.

**IRRIGATION**

One of the issues which is closely connected with agriculture is that of irrigation. From the earliest times agriculture in the Madras Presidency depended to great extent on its irrigation works for its prosperity. The various sources of irrigation in the Presidency were rivers, reservoirs, tanks and wells. The great perennial rivers that flew across the peninsula from the Western Ghats were of the highest utility, especially in their deltas. For
the greater part of the year, their low freshes provided a regular supply of water, while during the monsoons an immense quantity was available.

The irrigation systems were dependent on the Cauvery, the Godavari, Tamraparni, Noel, Tungabhadra, Amaravati, Vaigai, Pennar etc. These works varied greatly in magnitude and value. Some of them, supplied by the larger rivers, irrigated a thousand acres and more; others barely five acres. There were single channels leading from the Cauvery more than 30 miles long irrigating a hundred villages and more, and yielding a revenue of 1 1/2 lakhs.

In some districts, the facilities of river irrigation were greater than in others. Tanjore was the best favoured. The deltaic lands which were so fertile, were irrigated almost entirely from the river. In Madura and Dindigul, the Chief sources of water supply were the numerous channels from rivers and streams.

Trichinopoly depended greatly on the Cauvery Anicut and the New Iyen Vaykal, while Coimbatore was supplied largely by river channels. South Arcot was also favourably situated with regard to river irrigation, and to a certain extent, Tinnevelly. On the whole, rivers supplemented the monsoon rains to a very considerable degree.

Tanks and reservoirs constituted the mainstay of the ryot where irrigation from rivers was not feasible. Tanks were the most important source of irrigation under minor works. The presidency had a total of 27,729 tanks. The largest number of tanks were found in the Madura, Chittoor, the North and South Arcots and Chingleput districts.

The larger tanks were not excavated but formed by constructing bunds wherever natural facilities existed, as across valleys, round depressions, etc. A necessary feature of tanks was the sluice or vent which acted as a safety valve during the monsoon.

In Bellary, Cuddapah, Nellore, Coimbatore and the Circars, much of the wet cultivation was carried on by means of tank irrigation. Some of the
tanks were rain-fed and hence supplied water for a limited length of time in the year and some were supplied by channels. Some again, were mere puddles, irrigating one or even half an acre precariously, while others were very extensive, with banks thousands of yards in length.

In Madura there were two large tanks, the Rasingamangalam tank which was 9 miles long and 1 to 2 miles broad, and the Periakulam tank. 7 miles in length.17

The Chembrumbakum tank in Chingleput irrigated 58 villages. Other large tanks were those at Mamundoor in North Arcot, Cumbum in coddapah, Cunningherry in Nellore and Bapatla in Guntur. Such tanks however, were not numerous, the majority of tanks in South India being less than half a mile in length and yielding hardly Rs. 5,000 each as revenue, while many yielded Rs. 1,000 and even less.18

Considerable progress was achieved by the time the irrigation commission reported in 1903.19 That commission strongly recommended that the work of tank restoration should be more vigorously prosecuted and that the grants for the maintenance of minor works be increased. Nearly Rs 1,33,47,273 was spent on restoration. The total area, coming with in the scope of the tank restoration scheme investigation was 103,750 sq miles in the presidency. Investigation were taken up in basins comprising an area of 85,272 sq miles of which 80,042 sq miles were investigated up to 1920.20

Wells also constituted the means of irrigation in the presidency on which the cultivation of more than one-fourth of the total irrigated area depended. Over one and three quarter million acres were irrigated by water lifted from wells which represented approximately 50% of the total irrigated area of the presidency.21

They were almost invariably constructed by the agriculturists themselves. The rocky sub-soil of the greater part of the Presidency rendered well-construction difficult and expensive, the average cost being seldom less
than Rs. 100 per acre, and yet the ryots had built innumerable wells all over
the country. In a few districts indeed, such as Tanjore and Cuddapah, well-
sinking was comparatively easy, due to the sandy soil between the banks of
the large rivers, called Doruvus.\textsuperscript{22}

\begin{table}
\centering
\caption{Distribution of Wells in the Madras Presidency}
\begin{tabular}{|l|l|l|}
\hline
Name of District & No. of Wells & Area Irrigated (Acres) \\
\hline
Vizagapatam & 5,409 & 69,289 \\
East Godavari & 199 & - \\
West Godavari & 1,420 & 7,998 \\
Kistna & 1,340 & 9,311 \\
Guntur & 6,022 & 19,584 \\
Kurnool & 5,206 & 27,589 \\
Anantapur & 28,405 & 56,029 \\
Cuddapah & 29,530 & 75,506 \\
Nellore & 19,847 & 44,748 \\
South Arcot & 49,110 & 88,159 \\
Chittoor & 31,980 & 76,185 \\
North Arcot & 130,148 & 158,128 \\
Salem & 94,062 & 197,958 \\
Coimbatore & 100,939 & 397,217 \\
Trichinopoly & 74,370 & 94,613 \\
Tanjore & 25,356 & 12,315 \\
Madura & 46,787 & 122,580 \\
Ramnad & 18,719 & 59,827 \\
Tinnevelly & 40,698 & 105,401 \\
\hline
\textbf{Total} & \textbf{728,092} & \textbf{1,740,975} \\
\hline
\end{tabular}
\label{table7.2}
\end{table}

The North Arcot, Coimbatore and Salem districts had between them 45 per cent of the total number of wells. Lift irrigation and intensive cultivation were the rule in these districts and commercial crops like Cambodia cotton, groundnut and tobacco were the main crops raised under these wells. In the two west coast districts, where the rainfall was always heavy, there were no irrigation wells, worth mentioning; so too in the district of Vizagapatam and the three deltaic districts of Godavari, Kistna and Tanjore. In the Deccan districts well sinking was difficult and expensive and hence the number of wells was not considerable.

As against tanks which often dried up, the advantage of wells was the certainty of supply. Hence tobacco, chillies, onions and other garden crops which required a constant supply of water were raised largely by means of well irrigation. In Coimbatore, wells were considered to be the very "heart and life of the district, and the mainstay of the ryot as well as of the revenue."

Cattle power was largely employed, for raising water from wells, the most common method being the water-wheel. In some parts man power was used in which water was raised in a bucket by a man walking up and down a balance beam, moving on a pivot, to the end of which the bucket was attached. In some parts a capily was used by which two teams consisting of a man and a pair of bullocks could supply half an acre with water for rice cultivation.

In Malabar, a machine called a chakram was employed for draining fields, and in other parts, a basket suspended by four ropes. All these instruments for raising water were very ingenious, simple and effective, but they involved an enormous wastage of labour and of time. The development of well irrigation in Madras was largely attributed to the availability of power from oil engines from the beginning of 20th century and later the availability of cheap Hydroelectric power.
TABLE 7.3

TABLE SHOWING THE AVAILABILITY OF THE POWER OF OIL ENGINES

<table>
<thead>
<tr>
<th>Districts</th>
<th>No. of Oil Engines in working order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency Division</td>
<td>-</td>
</tr>
<tr>
<td>Ganjam</td>
<td>-</td>
</tr>
<tr>
<td>Vizagapatam</td>
<td>-</td>
</tr>
<tr>
<td>Godavari</td>
<td>-</td>
</tr>
<tr>
<td>Kistna</td>
<td>13</td>
</tr>
<tr>
<td>Guntur</td>
<td>2</td>
</tr>
<tr>
<td>Kurnool</td>
<td>-</td>
</tr>
<tr>
<td>Bellary</td>
<td>9</td>
</tr>
<tr>
<td>Anantapur</td>
<td>4</td>
</tr>
<tr>
<td>Cuddapah</td>
<td>35</td>
</tr>
<tr>
<td>Nellore</td>
<td>3</td>
</tr>
<tr>
<td>Chinglepet</td>
<td>24</td>
</tr>
<tr>
<td>South Arcot</td>
<td>69</td>
</tr>
<tr>
<td>Chittoor</td>
<td>1</td>
</tr>
<tr>
<td>North Arcot</td>
<td>11</td>
</tr>
<tr>
<td>Salem</td>
<td>-</td>
</tr>
<tr>
<td>Coimbatore</td>
<td>66</td>
</tr>
<tr>
<td>Trichinopoly</td>
<td>6</td>
</tr>
<tr>
<td>Tanjore</td>
<td>17</td>
</tr>
<tr>
<td>Madura</td>
<td>3</td>
</tr>
<tr>
<td>Ramnad</td>
<td>-</td>
</tr>
<tr>
<td>Tinnevelly</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>268</strong></td>
</tr>
</tbody>
</table>

Source: Season and crop Reports, 1900-1920.
These oil engines enabled the ryots to deepen wells to a depth where bullocks could not ordinarily be used for lifting water, and thereby obtained larger supplies. Therefore there was a good extension of this practice. In the whole presidency there were 268 engines, used for lift irrigation largely concentrated in South Arcot, Coimbatore, Salem and Chingleput districts.\textsuperscript{29} The progress of well irrigation in Madras was rapid in the early part of the century.\textsuperscript{30}

**PROGRESS OF IRRIGATION**

Madras with its 30 canal projects, 22 reservoir projects, 33086 tanks and 728,092 wells had facilities to irrigate annually between 11 and 12 million acres of crops.\textsuperscript{31} In the development of its irrigation system, the presidency ranked third in India, the Punjab and United Provinces having larger areas under irrigation. The total area under irrigated crops in all India was about 54 million acres and Madras contributed more than one-fifth of the area.\textsuperscript{32}

**TABLE 7.4**

**TABLE SHOWING THE PLACE OF THE MADRAS PRESIDENCY UNDER IRRIGATED CROPS IN THE BRITISH INDIA**

<table>
<thead>
<tr>
<th>Year</th>
<th>British India - Area irrigated in acres</th>
<th>Madras - Area cultivated in acres</th>
<th>Madras - Area irrigated in acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901 - 1902</td>
<td>44,098,000</td>
<td>36,574,000</td>
<td>10,532,000</td>
</tr>
<tr>
<td>1920 - 1921</td>
<td>47,789,679</td>
<td>33,041,655</td>
<td>11,418,042</td>
</tr>
</tbody>
</table>

*Source: Statistics of British India and Season and Crops Report, 1900-1921.*
Cultivation was protected by the state irrigation works. State irrigation works in the Presidency consisted of two classes. The first comprised the more important works (productive and unproductive) which were constructed, restored or improved by the Government at a capital cost of about 15 crores of rupees.\textsuperscript{33}

\begin{center}
\textbf{TABLE 7.5}
\end{center}

\begin{center}
\textbf{PARTICULAR SHOWING THE PRODUCTIVE IRRIGATION WORKS WITH EXTENT OF THEIR AREAS}
\end{center}

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of works</th>
<th>Area Irrigated</th>
<th>Total Area Irrigated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First Crop</td>
<td>Second Crop</td>
</tr>
<tr>
<td>1900 - 01</td>
<td>8</td>
<td>2,507,949</td>
<td>324,768</td>
</tr>
<tr>
<td>1910 - 11</td>
<td>15</td>
<td>2,938,088</td>
<td>362,640</td>
</tr>
<tr>
<td>1920 - 21</td>
<td>16</td>
<td>3,077,660</td>
<td>457,030</td>
</tr>
</tbody>
</table>

\textit{Source: Administrative Report of the chief engineer for irrigation 1900 - 1901 to 1920 - 1921.}

There were only 8 productive irrigation works in the Madras presidency irrigating 2,832,717 acres of land in the year 1900-1901 and the number of such works increased to 16 in the year 1920 irrigating 3,534,690 acres of land.\textsuperscript{34}
### TABLE 7.6

**UNPRODUCTIVE IRRIGATION WORKS IN THE MADRAS PRESIDENCY**

<table>
<thead>
<tr>
<th>Name of system</th>
<th>Year Operated</th>
<th>Districts Irrigated</th>
<th>Area Irrigable by the complete project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicacole river system</td>
<td>1900</td>
<td>Vizagapatam</td>
<td>67,000</td>
</tr>
<tr>
<td>Muniyaru system</td>
<td>1902</td>
<td>Kistna</td>
<td>10,580</td>
</tr>
<tr>
<td>Dondapad tank</td>
<td>1903</td>
<td>Gundur</td>
<td>250</td>
</tr>
<tr>
<td>Yerur tank</td>
<td>1907</td>
<td>Nellore</td>
<td>1,470</td>
</tr>
<tr>
<td>Sagileru system</td>
<td>1907</td>
<td>Cuddapah</td>
<td>4,500</td>
</tr>
<tr>
<td>Atnakur tank</td>
<td>1907</td>
<td>Gundur</td>
<td>460</td>
</tr>
<tr>
<td>Jangamaheswarapuram tank</td>
<td>1908</td>
<td>Gundur</td>
<td>290</td>
</tr>
<tr>
<td>Anamasamudram Beraparu tank</td>
<td>1910</td>
<td>Nellore</td>
<td>1,000</td>
</tr>
<tr>
<td>Hajipuram tank</td>
<td>1911</td>
<td>Nellore</td>
<td>700</td>
</tr>
<tr>
<td>Pannalaur tank</td>
<td>1911</td>
<td>Nellore</td>
<td>1,000</td>
</tr>
<tr>
<td>Markapur tank</td>
<td>1911</td>
<td>Kurnool</td>
<td>1,701</td>
</tr>
<tr>
<td>Nagavalli river system</td>
<td>1913</td>
<td>Vizagapatnam</td>
<td>27,658</td>
</tr>
<tr>
<td>Venkatapuram tank</td>
<td>1918</td>
<td>Kurnool</td>
<td>340</td>
</tr>
<tr>
<td>Bhavanasi tank</td>
<td>1919</td>
<td>Gundur</td>
<td>841</td>
</tr>
<tr>
<td>Yellanur tank</td>
<td>1919</td>
<td>Anandapur</td>
<td>925</td>
</tr>
<tr>
<td>Banjabatti reservoir</td>
<td>1919</td>
<td>Trichinopoly</td>
<td>2,500</td>
</tr>
<tr>
<td>Siddapur tank</td>
<td>1919</td>
<td>Kurnool</td>
<td>1,000</td>
</tr>
<tr>
<td>Nagavaram Anicut and Supplied channel</td>
<td>1919</td>
<td>Cuddapah</td>
<td>894</td>
</tr>
<tr>
<td>Mobad reservoir system</td>
<td>1921</td>
<td>Nellore</td>
<td>12,500</td>
</tr>
<tr>
<td><strong>Total area irrigated</strong></td>
<td></td>
<td></td>
<td><strong>1,35,609</strong></td>
</tr>
</tbody>
</table>

*Source: S.Y. Krishnasamy, *Rural problems in Madras, Monograph* 96*
There were 19 unproductive irrigation works in the presidency irrigating the total area of 1,35,609 acres of land as given in table No. 7.6.

The second class included all the smaller tanks and river channels of ancient construction which constituted the minor irrigation works both Government and Private. The Government took over their maintenance and devoted considerable sums annually for their upkeep.35

**TABLE 7.7**

**STATEMENT SHOWING THE NUMBER, AREA IRRIGATED AND GROSS REVENUE UNDER MINOR IRRIGATION WORKS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Channels</th>
<th>Tanks</th>
<th>Area Irrigated acres</th>
<th>Gross Revenue Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>4307</td>
<td>24211</td>
<td>2,958.681</td>
<td>72,29,606</td>
</tr>
<tr>
<td>1910</td>
<td>4307</td>
<td>24211</td>
<td>3,294.886</td>
<td>90,61,070</td>
</tr>
<tr>
<td>1920</td>
<td>6284</td>
<td>27729</td>
<td>3,287.390</td>
<td>95,73,716</td>
</tr>
</tbody>
</table>

*Source: Administrative Report of the Public Works Department, Part II, Irrigation 1900 - 1901 to 1920 - 1921.*

Minor works, of which there were nearly 6284 channels and 27729 tanks in the presidency36 were an important source of irrigation. Their value as a protection factor against crop failure was inestimable. They were generally found in the “dry” upland districts, where the crops were completely dependent on the capricious rainfall.37

They annually irrigated an area very nearly equal to that irrigated by the major systems. The area irrigated by minor irrigation works in 1920 was 3,287.390 acres.38 The largest number of tanks were found in the Madura, Chittor, the North and South Arcots and the chingleput districts.39

The great irrigation systems of the Presidency were the Godavari, the Krishna and the Cauvery deltas. The works consisted of weirs, by which a
sufficient head of water was obtained to irrigate the lands of the deltas of sluices and regulators by means of which water was conducted to the lands.\textsuperscript{40}

The Godavari Delta system which was completed by the 31\textsuperscript{st} March 1890 irrigated about 8 lakhs of acres and the total area irrigated in a year was over a million acres including two crops and the value of the crops grown was over Rs. 10 crores. The system cost about Rs. 1.95 crores and returns about 20 percent on the outlay.\textsuperscript{41}

The Krishna delta system which was sanctioned in 1882 was completed by the 31\textsuperscript{st} March 1898. It irrigated about 9 lakhs of acres. It cost about Rs. 2.25 crores and returns 16.63 percent on capital outlay.\textsuperscript{42}

The area irrigated under the cauvery delta system was about 870,000 acres (first crop) and just one million acres including the second crop. The value of the crops raised in the area was estimated at about Rs. 11.14 crores.\textsuperscript{43} The Government spent over Rs. 85 lakhs for improving the system since it was taken over from the Tanjore kings. The system yielded at a return of about 10 percent on the capital outlay.\textsuperscript{44}

Large sums were spent every year on the improvement and maintenance of these systems.

\textbf{TABLE 7.8}

\textbf{EXPENDITURE INCURRED IN IMPROVING THE WORKS OF THE GODAVARI, KISTNA AND CAUVERY DELTA SYSTEMS FROM 1900-1920 IN RS.}

<table>
<thead>
<tr>
<th>Year</th>
<th>Godavari delta</th>
<th>Kistna Delta</th>
<th>Cauvery Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-01</td>
<td>80,456</td>
<td>1,50,195</td>
<td>4,73,014</td>
</tr>
<tr>
<td>1910-11</td>
<td>69,146</td>
<td>59,816</td>
<td>1,08,488</td>
</tr>
<tr>
<td>1920-21</td>
<td>1,99,500</td>
<td>99,140</td>
<td>1,06,980</td>
</tr>
</tbody>
</table>

Source: \textit{Administration Report of the Irrigation branch of the Public Works Department in the Madras presidency for the years from 1900-1901 to 1920-1921}
The expenditure was for fresh works, viz new distributaries which would nearly double the irrigated area, for extensive drainage and for the improvement of all the old works. In 1898 the Government of India sanctioned a sum of Rs 4,73,014 for regulators across the certain main canals for better distribution of water in the Cauvery delta. For many years the general difficulty was to prevent the Cauvery from receiving more water than it could carry. The regulation of supply between the two rivers - Cauvery and Coleroon was rearranged by the entire reconstruction of the upper Anicut. The Grand Anicut also was remodelled at a cost of Rs.1,33,800 and fitted with shutters so as to assist when necessary in passing surplus water into the Coleroon.

The total expenditure in the irrigation branch of the public works Department during 1900-1901 was Rs. 55,59,736. The expenditure under class I was for the Head works, main canals and branches, distributaries, drainage and protective works. The chief works carried out under class II were improvements to the old coleroon drain, fitting iron shutters to the lower Coleroon Anicut and improvements to it.

The outlay on irrigation works during the year 1910-1911 amounted to Rs. 63.29 lakhs against Rs. 66.26 lakhs in the previous year. The total area charged as irrigated, including first and second crops under all classes of irrigation works was 7,173 thousands of acres against 7,148 thousand acres in the previous year. The total revenue realized was Rs. 256 lakhs against 253 lakhs in the previous year.

Thus large sums were spent every year on the improvement and maintenance of the irrigation systems, as a result of which the area irrigated increased every year and the total revenue also.

The other important irrigation systems were the Rushikulya and Periyar systems. The Rushikulya system in Ganjam district was a combined system of storage and direct irrigation. It irrigated lands between Aska and the coast. The system was formed by two masonry anicuts across the Mahanadi.
and Rushikulya rivers. When the supply from these rivers was insufficient it was supplemented by water from two storage works, the Russellkonda and Surada reservoirs.\textsuperscript{51}

Both these reservoirs were formed by dams of considerable size, that of Russellkonda is across Borunga river while that of Surada is across the Johora and Pathma rivers. The construction of the system was sanctioned by the Secretary of State in 1883 and the work was completed in 1896 with the exception of the Surda river which was opened in 1898. The area irrigated by this system in the year 1900 - 1901 was 80,204 acres\textsuperscript{52} of first crop and 2,164 acres of second crop and in the year 1920 - 1921 was 106,104 acres of first crop and 1,967 acres of second crop.\textsuperscript{53}

The Periyar system which came into operation in 1896 was an important scheme of irrigation designed to irrigate a large track on the north side of the river vaigai in the district of Madura. The Madura district was benefited mainly from the Periyar project. It irrigated about 126,000 acres in the Madura district. The system cost about Rs 108 lakhs and 6 percent of the capital outlay.\textsuperscript{54}

A continuous policy of extension and expansion was pursued. During the period 1905-11, construction and investigation were pushed on vigorously, the two most important works brought to completion being the Nagavalli and Divi schemes.\textsuperscript{55}

The Nagavalli project, sanctioned in 1905, was nearly completed in 1909.\textsuperscript{56} The works consisted in a regulator of 9 spans of 40 feet each across the Nagavalli river, ahead sluice and distributary channels commanding about 24,000 acres. The project was estimated to cost Rs. 18,16,300.\textsuperscript{57} Quite a large area under Vizagapatnam and a part of the old Ganjam district were irrigated by this project.

Under the head Productive the most important work was the Divi Pumping project. This was the first pumping installation on a large scale ever
introduced into India and was one of the biggest of its kind in the world. The project provided for the irrigation of 50,000 acres in Divi island (at the mouth of the Krishna) by pumping direct from the Krishna, which near its mouths formed natural storage of water, remaining fresh until December each year.\textsuperscript{58}

Three new Protective Works were sanctioned and constructed during the governorship of Arthur Lawley.\textsuperscript{59} Of these the Mopad project, for which the estimate was Rs. 26,00,000 was the most interesting on account of the height of its earthen dam. A great portion of the Nellore district which was particularly liable to drought was to be protected by this work.\textsuperscript{60}

Thus the irrigation systems were extended and expanded during the period.

**LAND IMPROVEMENT AND AGRICULTURAL LOANS**

The Government helped the agriculturist by grant of loans under the Land improvement-Loans Act of 1883\textsuperscript{61} and the Agriculturists Loan Act of 1884.\textsuperscript{62} Loans were granted to land holders and cultivators for making improvements on land there by adding to its letting value, viz. the construction of wells, tanks and other works, the preparation of land for irrigation.

The loans were granted by the Revenue Department after local enquiry and were repayable by equal annual instalments discharging both principal and interest. Under the Agriculturist's Loan Act short term and medium term loans were granted to owners and occupiers of arable land for agricultural purposes such as the purchase of seed grain, manure and cattle and the rebuilding of houses destroyed by fire and floods.\textsuperscript{63}

Loans were also granted for other agricultural purposes like purchase of fodder, purchase and erection of agricultural machinery and equipment like canemills and pump sets. For the relief of distress among cultivators in famine tracts, loans were granted under this Act to cultivators up to a maximum amount of Rs. 200 until the ripening of the next harvest.\textsuperscript{64}
The system of making loans to ryots for agricultural or land improvement purposes made progress during the period. Between the years 1905 and 1910 there was a large increase in the amount of loans disbursed. In 1907, in order to ensure that applications for loans were scrutinized and disposed of with increased promptitude and that accounts were correctly and accurately kept, Collectors were authorized to entertain, in anticipation of sanction, additional temporary establishment for the special work of attending to loan applications in accordance with a sliding scale.

Revenue Inspectors, Deputy Tahsildars and Tahsildars were employed in accordance with the number of application for loans received and pending. The money limited up to which Tahsildars and other local officers were empowered to sanction loans with out reference to higher authority were also raised and all classes of such officers were instructed to disburse loans, whenever practicable, during their tours, direct to the borrowers in the villages.

In 1906 a Special Deputy Collector was for the first time appointed in Chingleput and Coimbatore for the sole purpose of dealing promptly with applications for loans in those districts. As far as possible they were to prevent the loans taken by ryots from being wasted on unsuccessful wells and obtain a survey of the sub-soil resources of the tract. He was instructed to visit villages, to explain to the ryots the advantages of the Government system of loans and to see that all applications for loans were promptly and expeditiously disposed of.

The result of these measures was the large increase in the total amount of loans disbursed during the five years ending 1909-1910 which stood at Rs. 35.16 Lakhs as compared with 18.21 lakhs in the previous five years, showing that the amount of State aid thus granted had nearly doubled.
TABLE 7.9

AMOUNT OF LOAN DISBURSED DURING FIVE YEARS-1905-1910

<table>
<thead>
<tr>
<th>Fasli 1315 (1905 - 06)</th>
<th>Land Improvement Act, Rs. (Lakhs)</th>
<th>Agricultural Loans Act. Rs. (Lakhs)</th>
<th>Total Rs. (Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.61</td>
<td>2.67</td>
<td>6.28</td>
<td></td>
</tr>
<tr>
<td>Fasli 1316 (1906 - 07)</td>
<td>2.65</td>
<td>2.19</td>
<td>4.84</td>
</tr>
<tr>
<td>Fasli 1317 (1907 - 08)</td>
<td>3.57</td>
<td>4.02</td>
<td>7.59</td>
</tr>
<tr>
<td>Fasli 1318 (1908 - 09)</td>
<td>4.42</td>
<td>5.52</td>
<td>9.94</td>
</tr>
<tr>
<td>Fasli 1319 (1909 - 10)</td>
<td>2.91</td>
<td>3.60</td>
<td>6.51</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17.16</strong></td>
<td><strong>18.00</strong></td>
<td><strong>35.16</strong></td>
</tr>
<tr>
<td>Previous 5 years Total</td>
<td>10.13</td>
<td>8.08</td>
<td>18.21</td>
</tr>
</tbody>
</table>

Source: Notes on Lawley’s Administration, section - II, p. 103.

Out of the 35.16 Lakhs disbursed in the five years ending 30th June 1910, no less than Rs. 8.81 lakhs were devoted to the construction or repair of wells, of which 6,600 capable of irrigating about 30,000 acres were built or repaired with the money thus advanced by Government. This furnished a substantial measure of protection against scarcity to grow more valuable crops than would be possible on land not supplied with well irrigation.

AGRICULTURAL CREDIT SOCIETIES

The report of the Indian Famine Commission of 1904 led to the introduction of the co-operative movement in to India with the passing of the Co-operative Societies Act of 1904. The Act was designed to assist agricultural credit and to foster agricultural credit societies as distinct from agricultural banks. The first purely co-operative society was registered in the presidency on the 30th August 1904.
Among the co-operative societies Agricultural societies were the most important. They were of six kinds. They were Credit societies, Purchase, purchase and sale, Production, Production and sale, Insurance societies and other forms which consisted of Kudimaramat and irrigation, Agricultural demonstration, Land reclamation, Labour contract, Societies for tenants and depressed classes.73

Between the years 1908 and 1920 there was a phenomenal growing in the number of societies. The following figures show the progress made upto 1920 - 1921.

**TABLE 7.10**

PROGRESS IN THE NUMBER OF SOCIETIES

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Societies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908 - 1909</td>
<td>180</td>
</tr>
<tr>
<td>1914 - 1915</td>
<td>1600</td>
</tr>
<tr>
<td>1917 - 1918</td>
<td>2271</td>
</tr>
<tr>
<td>1920 - 1921</td>
<td>6289</td>
</tr>
</tbody>
</table>

*Source: Administrative Reports of the Co-operative Department from 1908 - 1909 to 1920 - 1921.*

Loans were given for redemption of prior debts, for productive purposes and non productive purposes.
 TABLE 7.11

STATEMENT SHOWING THE LOANS GIVEN BY AGRICULTURAL SOCIETIES

<table>
<thead>
<tr>
<th>Year</th>
<th>Loans for redemption of prior debts</th>
<th>Loans for productive purposes</th>
<th>Loans for non-productive purposes</th>
<th>Total Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rs. Lakhs</td>
<td>Rs. Lakhs</td>
<td>Rs. Lakhs</td>
<td>Rs. Lakhs</td>
</tr>
<tr>
<td>1914-1915</td>
<td>10.74</td>
<td>15.04</td>
<td>0.65</td>
<td>26.43</td>
</tr>
<tr>
<td>1917-1918</td>
<td>18.86</td>
<td>29.77</td>
<td>1.06</td>
<td>49.69</td>
</tr>
<tr>
<td>1920-1921</td>
<td>23.16</td>
<td>63.22</td>
<td>2.06</td>
<td>88.44</td>
</tr>
</tbody>
</table>

Source: Administrative Reports of the Co-operative Department from 1914 - 1915 to 1920 - 1921.

These loans were of immense advantage to the large mass of small cultivators. The Agricultural Department made them play a more useful part in the improvement of agriculture.74

The agrarian status in the Madras presidency has been discussed in this chapter in which the land, its classification, survey of land, settlements, the maintenance of settlement registers and pattas, land record staff, the Madras Estate Land Act and the land improvement and agricultural loans were explained. The development of irrigation resources has also been examined. The following chapter deals with cultivation.
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24. Ibid.
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64. Ibid.
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